

REMARKS

Formal Matters

Applicants note that the Examiner has acknowledged the reference filed with the Information Disclosure Statement of September 30, 2003.

Applicants also note that the Examiner has acknowledged the claim to foreign priority and has acknowledged receipt of a certified copy of the priority documents.

Claims

Claims 1-9 are all the claims pending in the application. Claims 1,2 and 4-8 have been elected for prosecution and have been examined.

Prior Art Rejections

Claims 1-2 and 4-8 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Hiramata et al. (US 6,028,299).

Applicants amend claims 1, 5, and 7 and traverse the rejections.

Independent Claim 1

Independent claim 1 recites a feature of a shutter electrode being continuously extended beyond a shutter drain on a side of the shutter drain opposite to the photodiode array.

The Examiner contends that the sensor array 12 corresponds to the claimed at least one photodiode array. See Hiramata Fig.1, col. 3 lines 34-35 and Office Action page 2. The Examiner also contends that the overflow gate 15 corresponds to the claimed shutter electrode. The Examiner further contends that the overflow drain 16 corresponds to the claimed shutter drain. See Hiramata Fig.1, col. 3 and Office Action page 3.

Figure 1 in Hiramata shows that the overflow gate 15 does not extend beyond the overflow drain 16 on a side of the overflow drain 16 opposite to the sensor array 12, wherein the side of

the overflow drain 16 opposite to the sensor array 12 is the side facing the sensor array 22. As seen from Figure 1 in Hirama overflow gate 25 extends from the overflow drain 26 towards the sensor array 22. Further, the overflow gates 15 and 25 are separate, because the overflow gates are supplied with different signals Φ SHUT1, SHUT2. See Fig. 1, 4 and column 5, lines 59 to column 6, line 19. One skilled in the art would understand that overflow gates 15 and 25 are not the same and, hence, Hirama does not teach or suggest that a shutter electrode continuously extends beyond a shutter drain on a side of the shutter drain opposite to the photodiode array.

Therefore, Hirama does not anticipate claim 1 and the Examiner is respectfully requested to withdraw the rejection.

Independent Claim 5

Claim 5 recites a feature of a shutter electrode provided between a photodiode array and a shutter drain, said shutter electrode further continuously extending to across said shutter drain.

As seen from Fig. 1 in Hirama and as discussed above, the overflow gate 15 does not extend across the overflow drain 16.

Therefore, Hirama does not anticipate claim 5 and the Examiner is requested to withdraw the rejection.

Independent Claim 7

Independent claim 7 recites a feature of a shutter gate electrode that is provided parallel to a photodiode array so as to be common to the photodiode array pair.

The Examiner contends that the overflow gate 15 and 25 are common to the sensor arrays 12 and 22. See Office Action page 3. As discussed above, overflow gates 15 and 25 are separate from each other and as seen from Fig. 1 in Hirama, neither overflow gate 15 nor overflow gate 25 is common to the sensor arrays 12 and 22.

Claim 7 also recites a feature of a shutter electrode which is provided between each of a photodiode array pair and a shutter drain, said shutter electrode extending to directly above said shutter drain so that said shutter gate electrode becomes a single shutter gate electrode.

As discussed above, overflow gates 15 and 25 are separate and hence cannot anticipate the above feature.

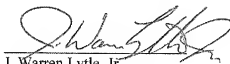
Therefore, Hiram does not anticipate claim 7 and the Examiner is requested to withdraw the rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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